

### **POSTER PRESENTATION**

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# Murine peripheral blood prognostic biomarkers for tumor survival following combination aCTLA-4 and aPD-1 treatment

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From 30th Annual Meeting and Associated Programs of the Society for Immunotherapy of Cancer (SITC 2015) National Harbor, MD, USA. 4-8 November 2015

#### **Background**

Immune checkpoint inhibitors, particularly those targeting CTLA-4 and PD-1, are transforming the way cancer is treated. However, these therapies do not benefit all patients and frequently cause significant immune-related adverse events. Therefore, prognostic biomarkers that identify positively-responding patients, early in the course of therapy, are essential for guiding treatment decisions and improving patient outcomes.

#### **Methods**

In this study, we present evidence that shortly after initiating combination PD-1/CTLA-4 blockade, there is a transient increase in the frequency of pro-inflammatory and cytotoxic lymphocytes in peripheral blood, and the dynamics of this shift correlate with survival outcomes in multiple murine models.

#### Results

Specifically, we observed that 1) the relative frequency of cytotoxic CD8 T cells among peripheral lymphocytes and 2) the pro-inflammatory capacity of peripheral lymphocytes are both predictive for outcomes at an early time point. Surprisingly, robust correlations between peripheral lymphocyte markers and outcomes were limited to CD8 T cell populations. In general, the expression of potential biomarkers on peripheral CD4 T cells, including ICOS and FoxP3, were poorly correlated with outcomes in this study.

#### **Conclusions**

Overall, these findings suggest that elements of the near-term peripheral immune response to dual anti-PD-1/anti-CTLA-4 therapy associated with cytotoxic lymphocyte function may provide unique prognostic biomarkers for therapeutic outcomes.

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Published: 4 November 2015

doi:10.1186/2051-1426-3-S2-P91

Cite this article as: Hilgart-Martiszus *et al*: Murine peripheral blood prognostic biomarkers for tumor survival following combination aCTLA-4 and aPD-1 treatment. *Journal for ImmunoTherapy of Cancer* 2015 **3** (Suppl 2):P91.

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